QNAP

TS-253E / TS-453E

Intel® J6412 Quad-Core Long-Term Availability NAS for Business and Professional Users

Provides dual-port 2.5 GbE, 4K HDMI dual-screen output, and dual M.2 PCIe SSD expansion slots

intel. CELERON

4K HDMI

2.5GbE

M.2 SSD

8GB RAM

Post-epidemic accelerates enterprise transformation, sustainability and maintenance will be the key

「 This is a year for global corporate information leaders to plan for the future . 」 John-David Lovelock , Vice President of Research at Gartner Inc said.

Affected by the epidemic in recent years, work modes have become more diverse and flexible, and many companies have also begun to think about how to make IT assets more flexible and to overcome time and location constraints for flexible configuration.
TS-253E / TS-453E can be supplied stably until 2029, providing SMB with flexible deployment according to staged needs.

Source：Commercial Times (https://reurl.cc/M0EO2K)

TS-253E

TS-453E

SSD prices are expected to fall, improving storage performance is now

SSD become popularization, upgrade now !

The cost per GB of storage for SSDs continues to decline, and the storage capacity continues to grow. In addition, SSD provides better storage performance compared to traditional hard drives.

Type	3Q22F
Enterprise SSD	Expected to be flat
Client SSD	decline 3~8%
3D NAND Wafers (TLC & QLC)	decline 5~10%
Total NAND Flash	decline 0~5%

Source：TrendForce, 2022.06

TS-253E / TS-453E NAS Main Features

Long-term availability NAS

Stable long-term availability until 2029

Dual 2.5 GbE ports

Sufficient 2.5 GbE network bandwidth for smooth data transfer experience

Dual M.2 PCIe SSD expansion slots

Optimum configuration of SSD and HDD

Dual 4K HDMI ports

Provide dual-port screen output for monitoring or A/V needs

8 GB RAM on board

Sufficient memory makes NAS applications more flexible

Quad - core processor

Intel Celeron J6412 4-core burst 2.6 GHz processor, supports various applications of NAS

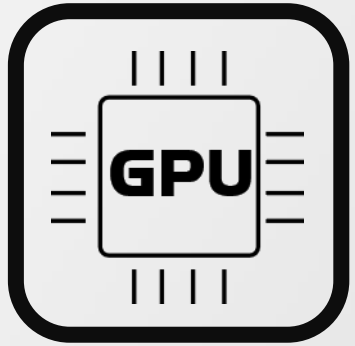
Powered by Intel Celeron J-series high-efficiency Quad-core processors

Intel J6412 quad-core processor, burst frequency up to 2.6GHz, and support AES-NI encryption

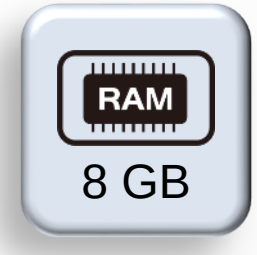
CPU Specifications	
Total Cores	4
Total Threads	4
Burst Frequency	2.60GHz
Processor Base Frequency	2.00GHz

Processor Graphics

Intel® UHD Graphics for 10th Gen Intel® Processors, support 4K output



Outperforms competing products in the same class with a built-in 8 GB onboard memory



TS-253E / TS 453E built-in 8GB large capacity memory

Compared to comparable NAS that generally use lower-capacity memory to save cost , TS-253E / TS 453E are designed with 8 GB large-capacity memory, which can make the overall NAS more smoothly.

QVR Elite

Includes 2 Free Channels

Snapshots

Support up to 1024

Run more apps
through App Center

Dual 2.5 GbE high-speed network ports

Dual 2.5 GbE ports *

Provide up to 5Gbps data transfer capability through Port Trunking network aggregation.

***Also compatible with 1GbE & 100MbE**

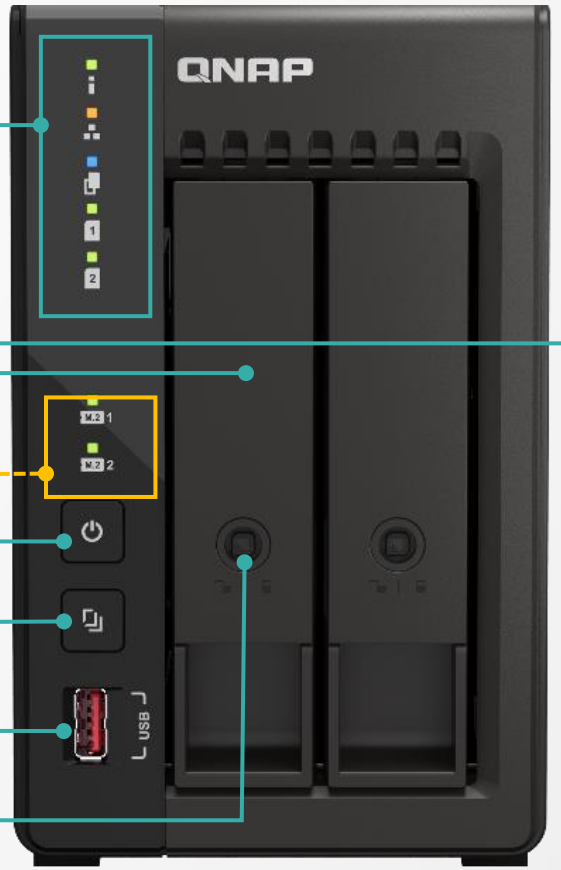
High-speed transmission with CAT 5e

	CAT 5e	CAT 6	CAT 6A
100M	✓	✓	✓
1G	✓	✓	✓
2.5G	✓	✓	✓
5G	✓	✓	✓
10G	X	✓(55m)	✓

TS-253E / TS-453E front view

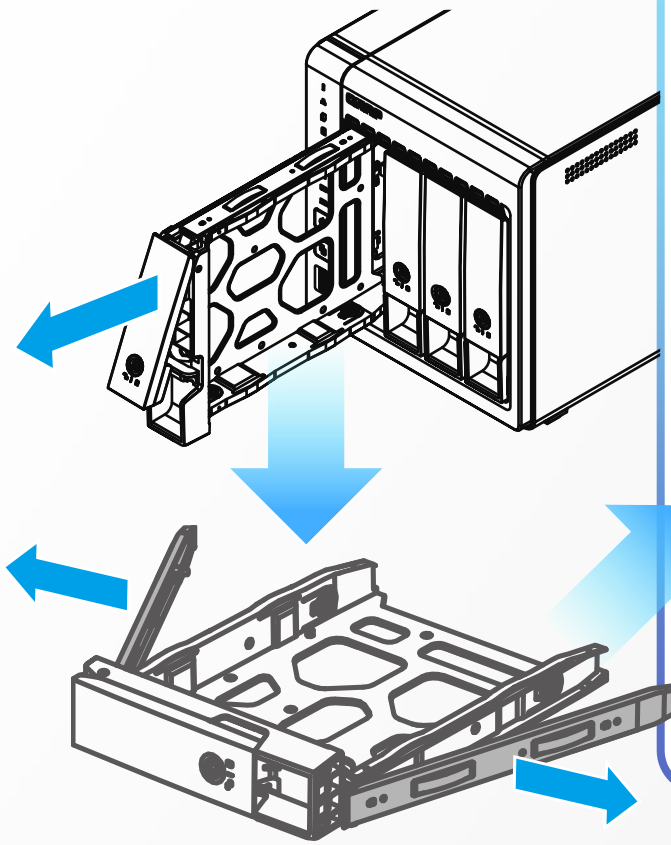
- LED indicators with adjustable brightness：Status, LAN, USB Copy Drive
- 2/4 x SATA 6Gb/s 3.5”/2.5” HDD/SSD
- LED indicators for M.2 SSD
- Power button
- USB Copy button
- USB 3.2 Gen 2 port
- Tray with lock kit

TS-253E

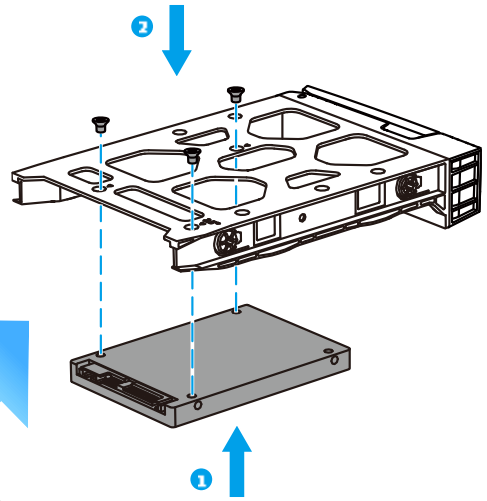


TS-453E

Installing 2.5" / 3.5" SATA HDD or SSD

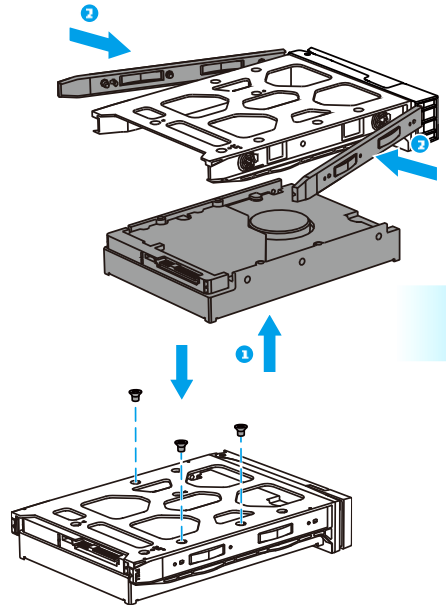


2.5” SSD

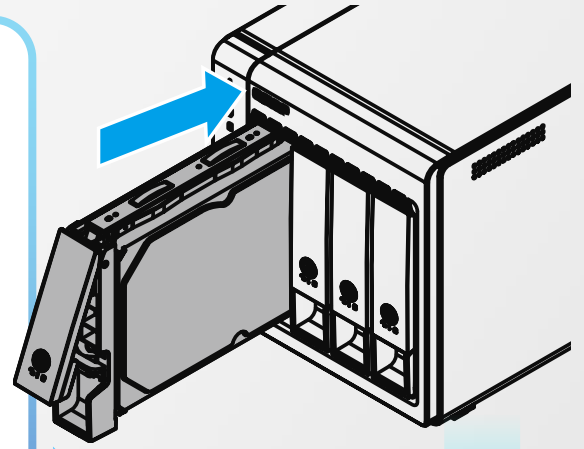


Install 2.5” SSD with screws

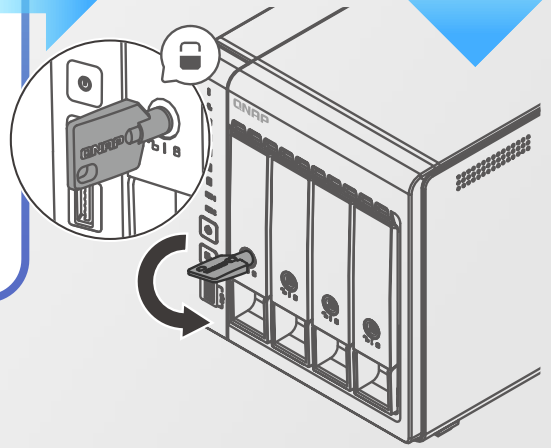
3.5” HDD



Install 3.5” drives without tools



Lock kit for Tray safty



Attain greater NAS performance by installing M.2 2280 NVMe PCIe SSDs (sold separately)

Dual M.2 2280 PCIe Gen3 x2 slots Support NVMe SSD

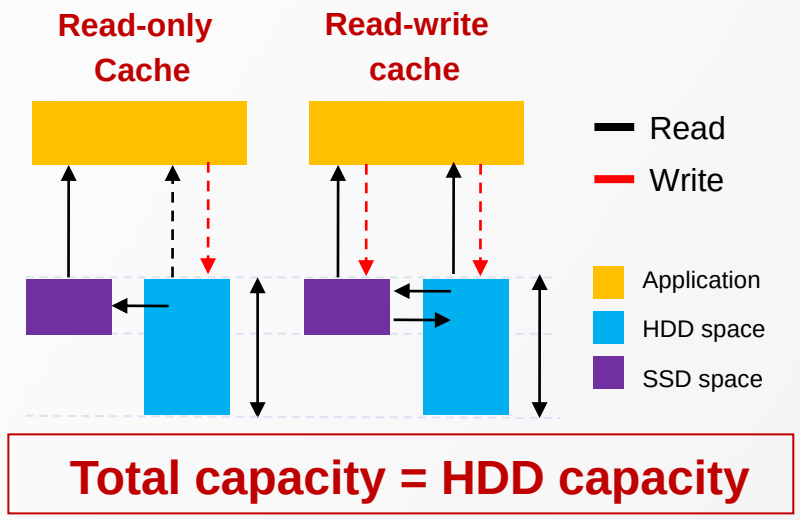
providing SSD cache, and Qtier automatic tiered storage, so that SSD and HDD storage space can achieve the best configuration at any time.

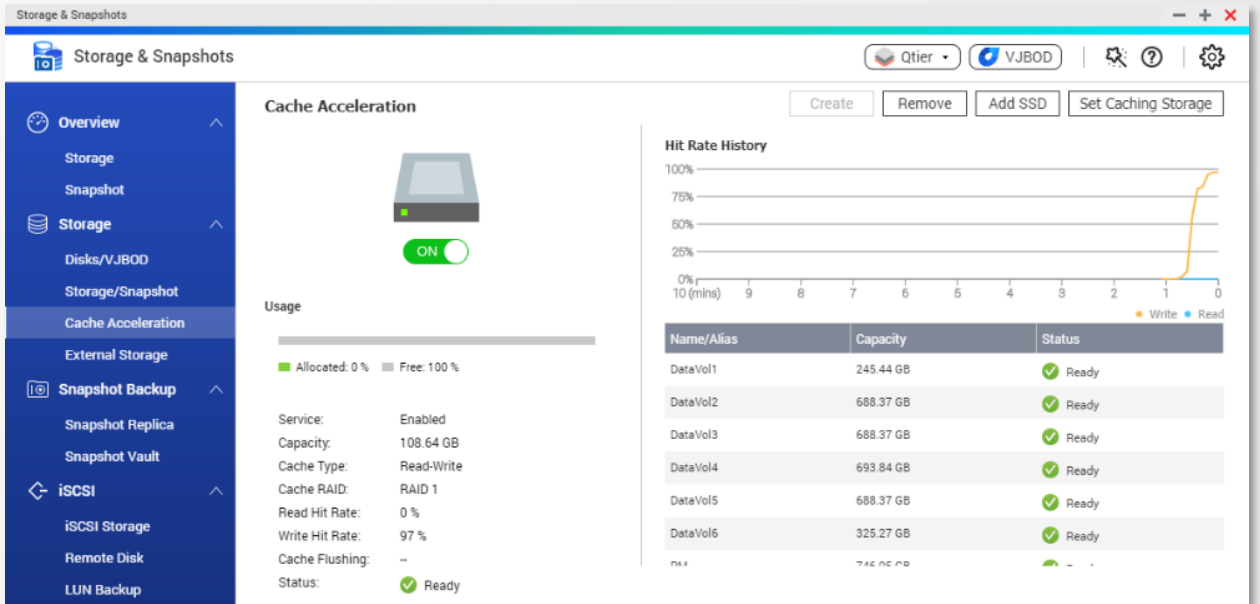
M.2 NVMe SSD cache for improved performance at a lower cost

- Especially useful for RAID 5/6 and applications dealing with small files or concurrent user access.
- TS-253E / TS-453E onboard 8 GB RAM，provide 16TB SSD cache volume

Improves I/O latency For IOPS-demanding apps

Global SSD cache Can share a single SSD volume/RAID with all volumes/iSCSI LUNs for a read-only or read-write cache.





Qtier™ Drives Auto-Tiering constantly optimize data across storage tiers

Qtier Engine

- **Hot data**
- **Warm data**
- **Cold data**

- Automatically moves hot data to high-performance drives and cold data to lower-cost, higher-capacity drives.
- Unlike SSD cache, the SSD capacity in Qtier can be used to store data.

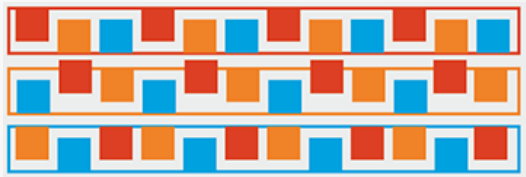
01

Before tiering

Frequently accessed data is not optimized

02

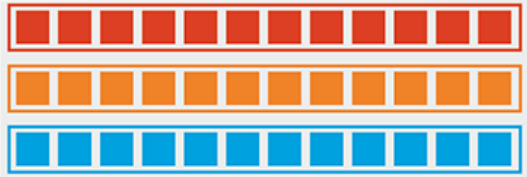
Start data tiering



03

After tiering

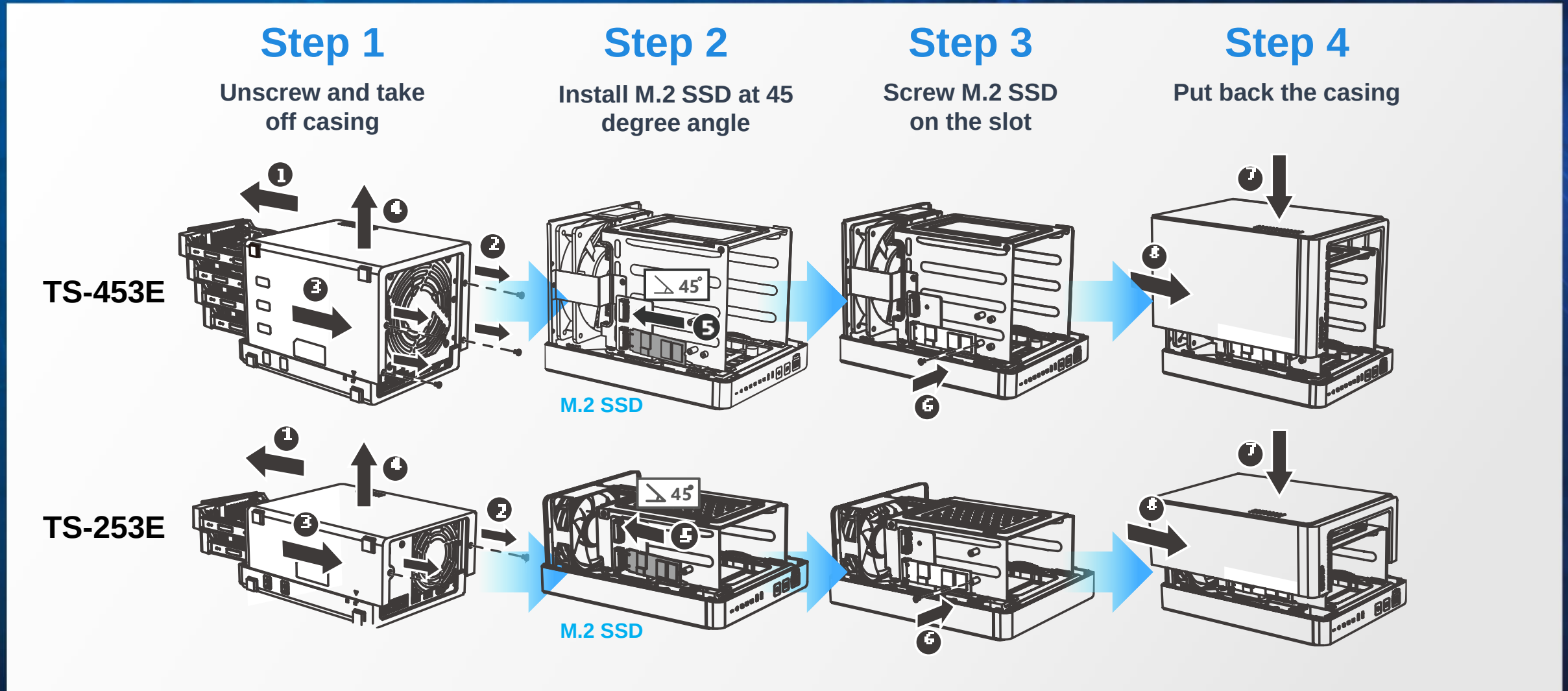
Data is optimized



04

Changes in data access pattern

Installing M.2 2280 NVMe PCIe SSD

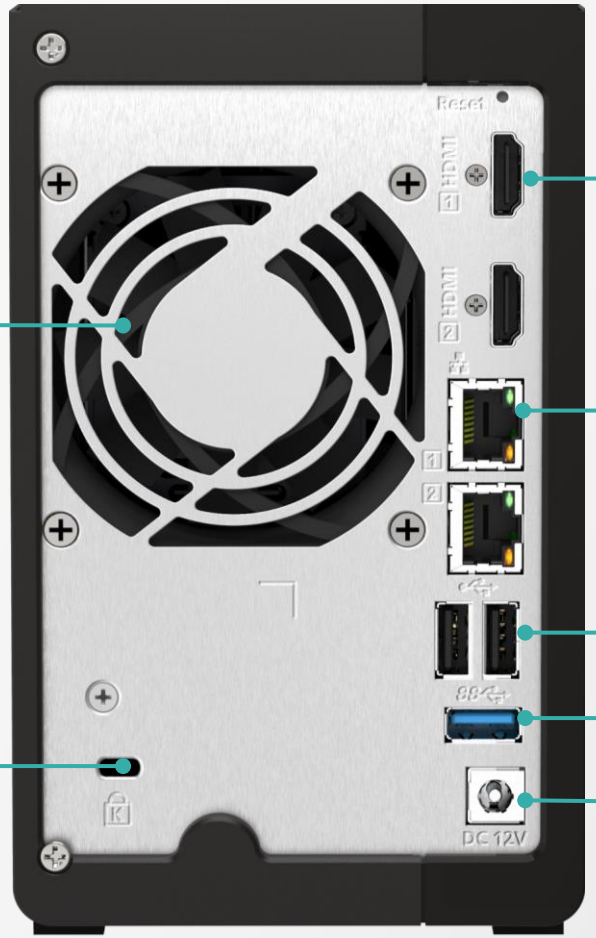


TS-253E / TS-453E rear view

TS-453E

12CM Smart fan

TS-253E



7CM Smart fan

K-Lock

2 x HDMI 1.4b

2 x 2.5 Gigabit Ethernet port

2 x USB 2.0 port

USB 3.2 Gen 2 port

12V DC power input

Optional Support USB JBOD & RAID Storage Expansion Unit

TR-002

2-bay
Desktop SATA 6Gb/s JBOD
Support hardware RAID

TR-004

4-bay
Desktop SATA 6Gb/s JBOD
Support hardware RAID

TL-D800C

8-bay
Desktop USB 3.2 Gen 2 JBOD

TR-004U

4-bay
Rackmount USB 3.2 Gen 1 JBOD
Support hardware RAID

TL-R1200C-RP

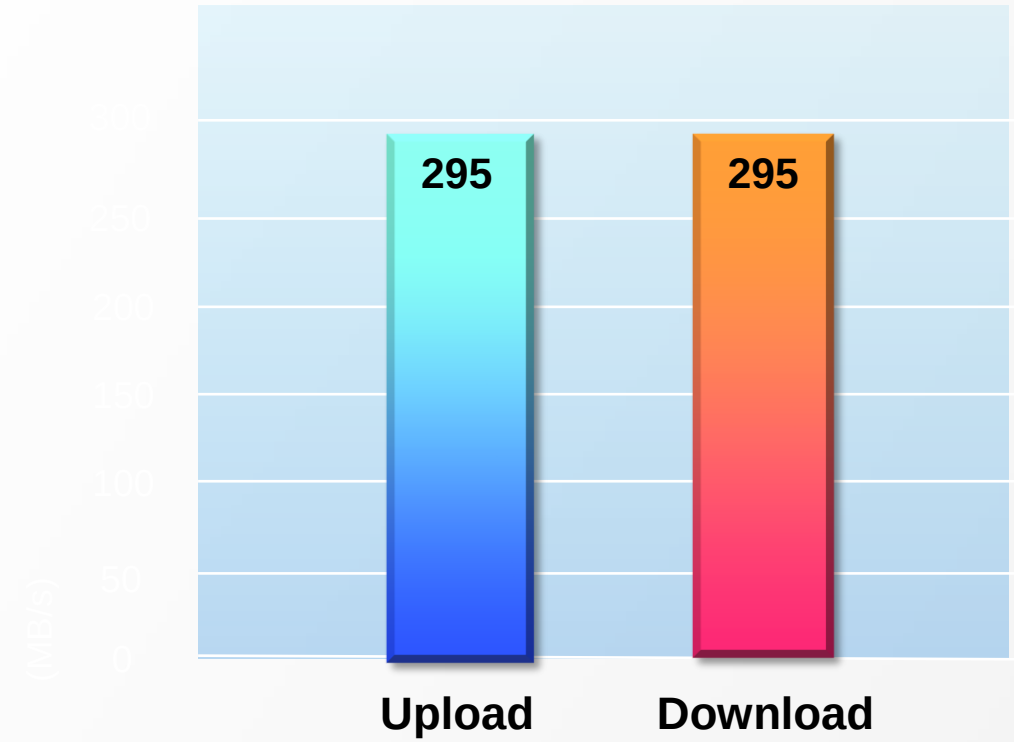
12-bay
Rackmount USB 3.2 Gen 2 JBOD
Support dual power backup

Maximum of JBOD / RAID expansion enclosures

TR-002	2
TR-004	2
TR-004U	2
TL-D800C	1
TL-R1200C-RP	1

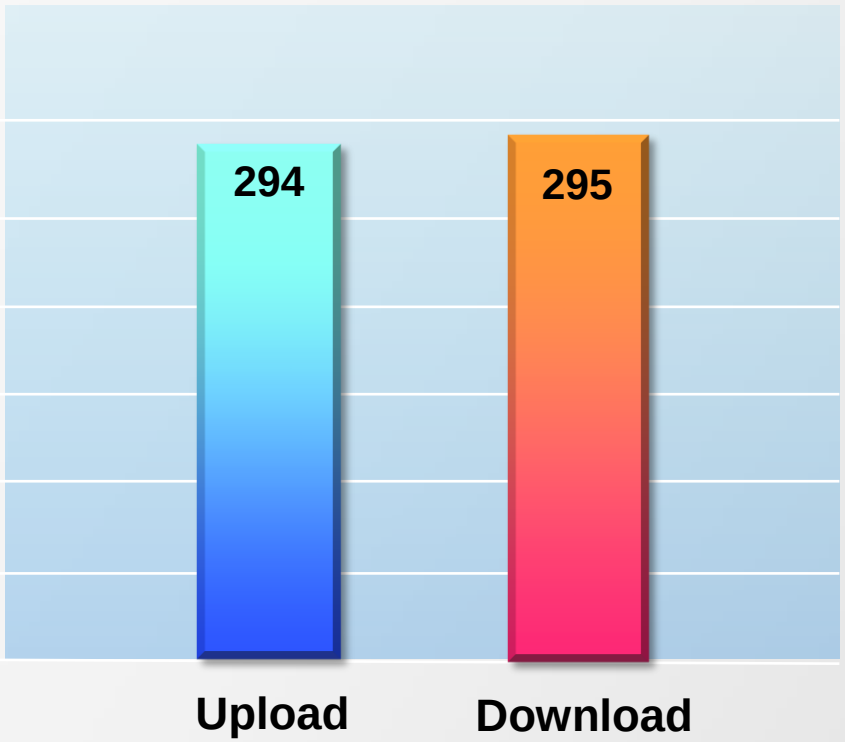
1 x 2.5GbE for 10GB file transfer performance

1 x 2.5GbE Windows file transfer (10GB)



Environment:
NAS | TS-453E, QTS 5.0, 4 x Samsung 860 Pro 512GB, RAID 5, thick volume
PC | Windows Server 2016 Standard, Intel Core i7-6700 3.4 GHz, 64GB RAM

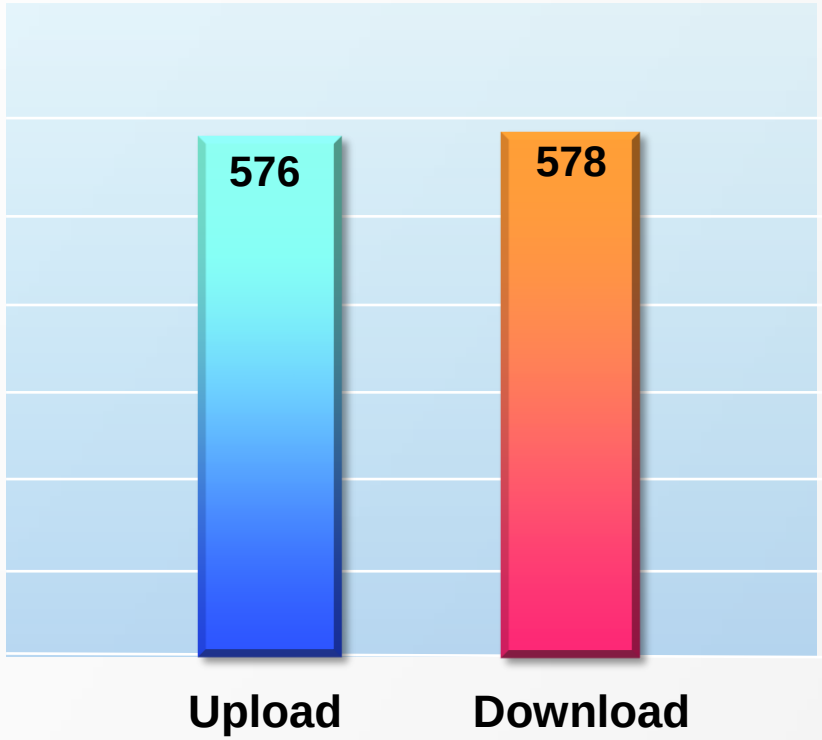
1 x 2.5GbE Windows file transfer (10GB)
NAS encrypted volume



Tested in QNAP Labs. Figures may vary by environment.

2 x 2.5GbE for 10GB file transfer performance

2 x 2.5GbE Windows file transfer (10GB)



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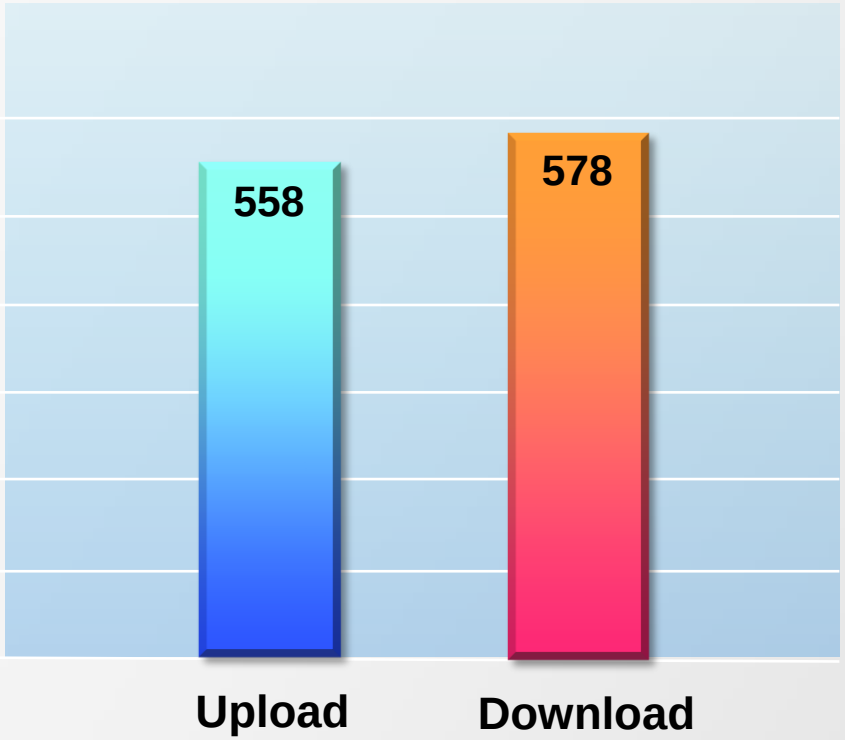


Tested in QNAP Labs. Figures may vary by environment.

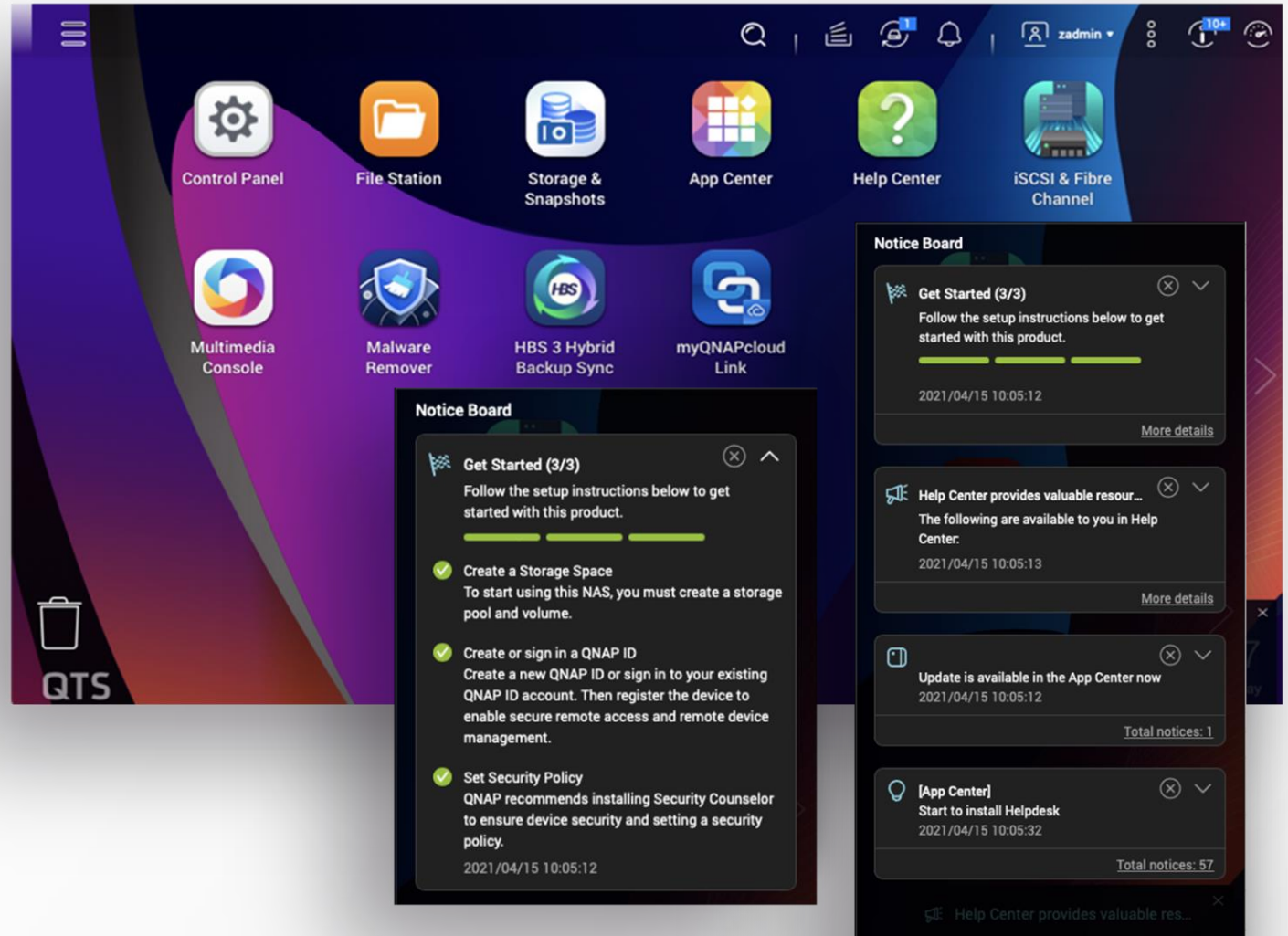
TS-253E / TS-453E

Live Demo

TS-253E / TS-453E

Software Introduction

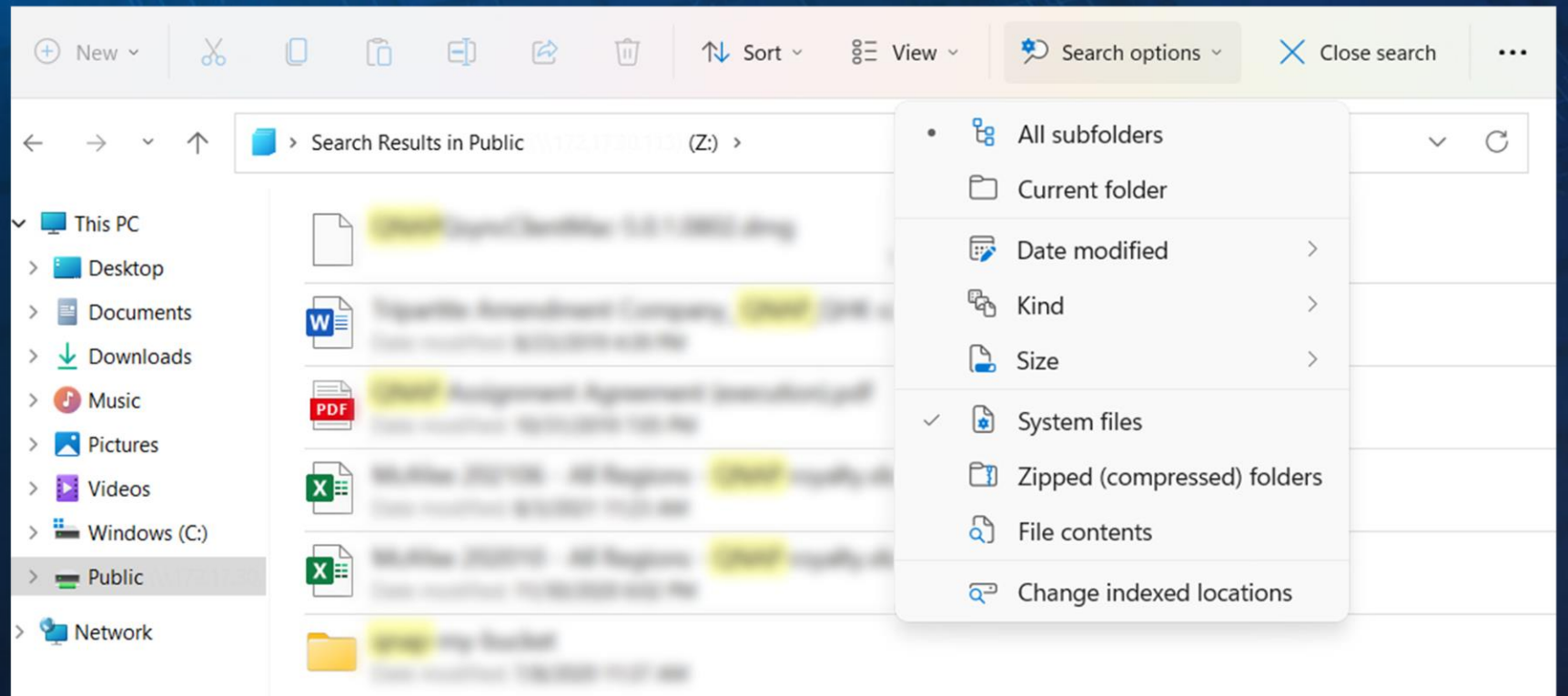
Equipped with the latest QTS 5.0 NAS operating system



- New Linux Kernel 5.10 improved security
- Smooth and reactive user interface
- Increased NVMe SSD cache performance
- Supports WireGuard VPN

Windows Search Protocol (WSP) support for NAS shared folders

Windows® 10/ Windows Server® 2016 (or later) users can easily search NAS shared folders via Windows® when an SMB drive is mounted to the NAS. Advanced file search by time, file type, or size is supported for greater convenience.



*QTS 5.0.1 provided

TS-253E / TS-453E natively supports exFAT

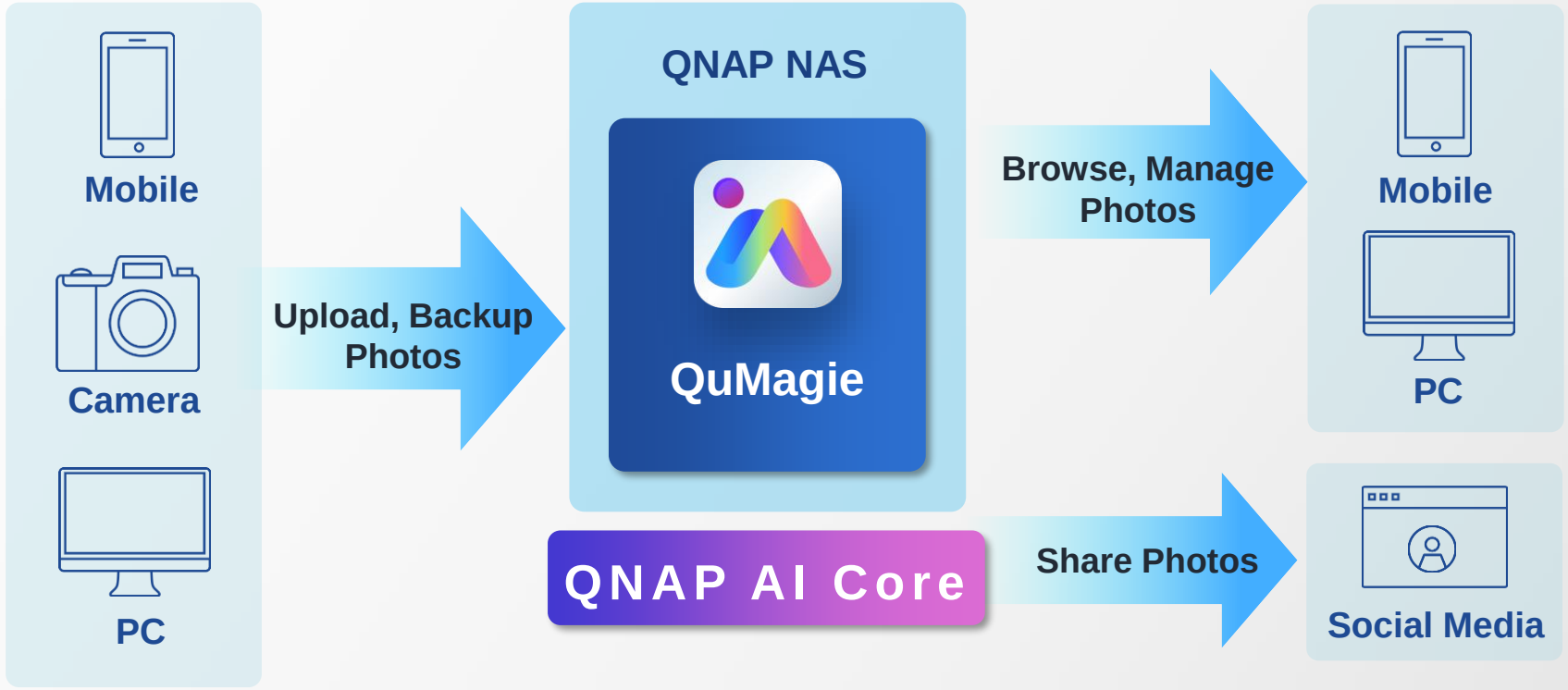
From QTS version 5.0, exFAT is natively supported free of charge on TS-253E / TS-453E . exFAT is a file system optimized for flash storage (such as SD cards and USB devices) and helps accelerate large media file transfer.

File System	exFAT	NTFS	FAT32
Maximum File Size	16EB	16TB	4GB
Typical Usage	Next-generation USB drives and SD cards (such as SDXC) that require higher capacities and faster speeds	The file system used by Windows	The standard file system used by normal USB drives

Faster image identification with integrated Intel® OpenVINO™ AI engine.

QuMagie

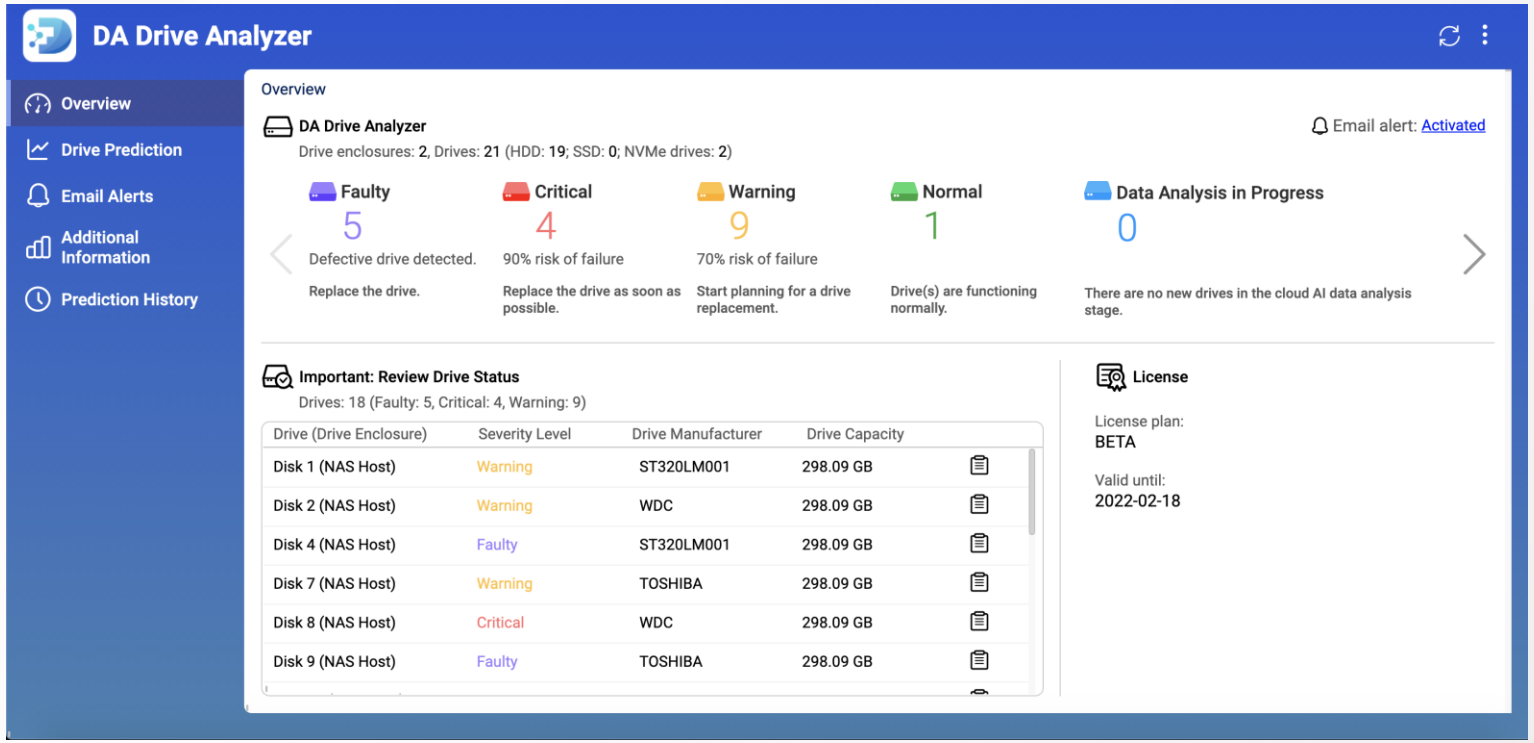
Organize photos with similar faces using facial recognition



DA Drive Analyzer ,
Predict Drive Failure and Minimize Downtime

1 free disk prediction per NAS

Paid subscription for additional disks for added protection



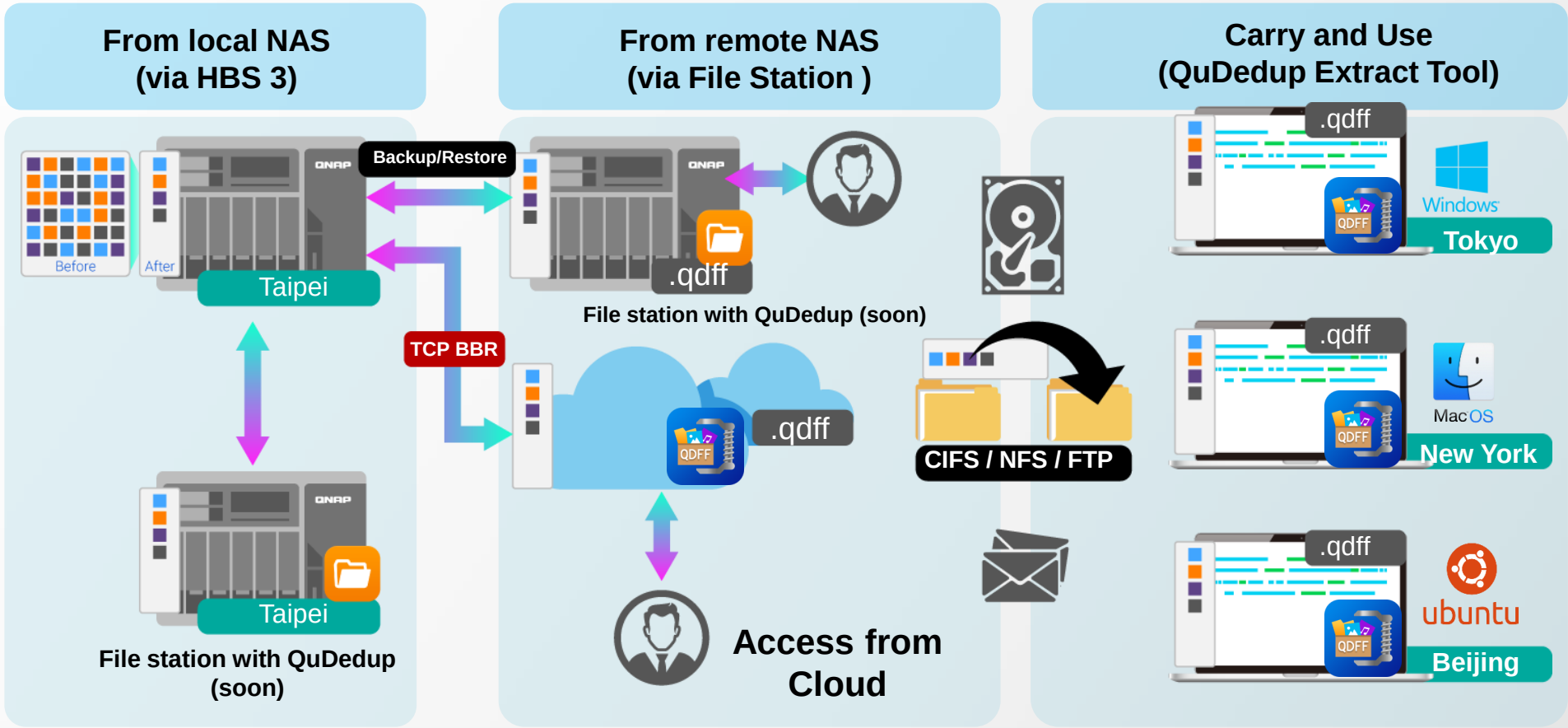
Predict Drive Failure and Minimize Downtime

DA Drive Analyzer integrates ULINK cloud artificial intelligence technology, which can notify you before disk failure, helping you prevent data loss or downtime loss caused by unwarranted disk damage.

Backup data with deduplication

Hybrid Backup Sync

Keep 3 copies, on 2 types of storage, and store 1 copy off-site to ensure your data safety.



Snapshots Help You Fight with Ransomware Threats

TS-253E / TS-453E supports Snapshot , like taking a photo - within seconds the complete status of your NAS system and data is recorded.

Mitigate the growing threat of ransomware

Step 1

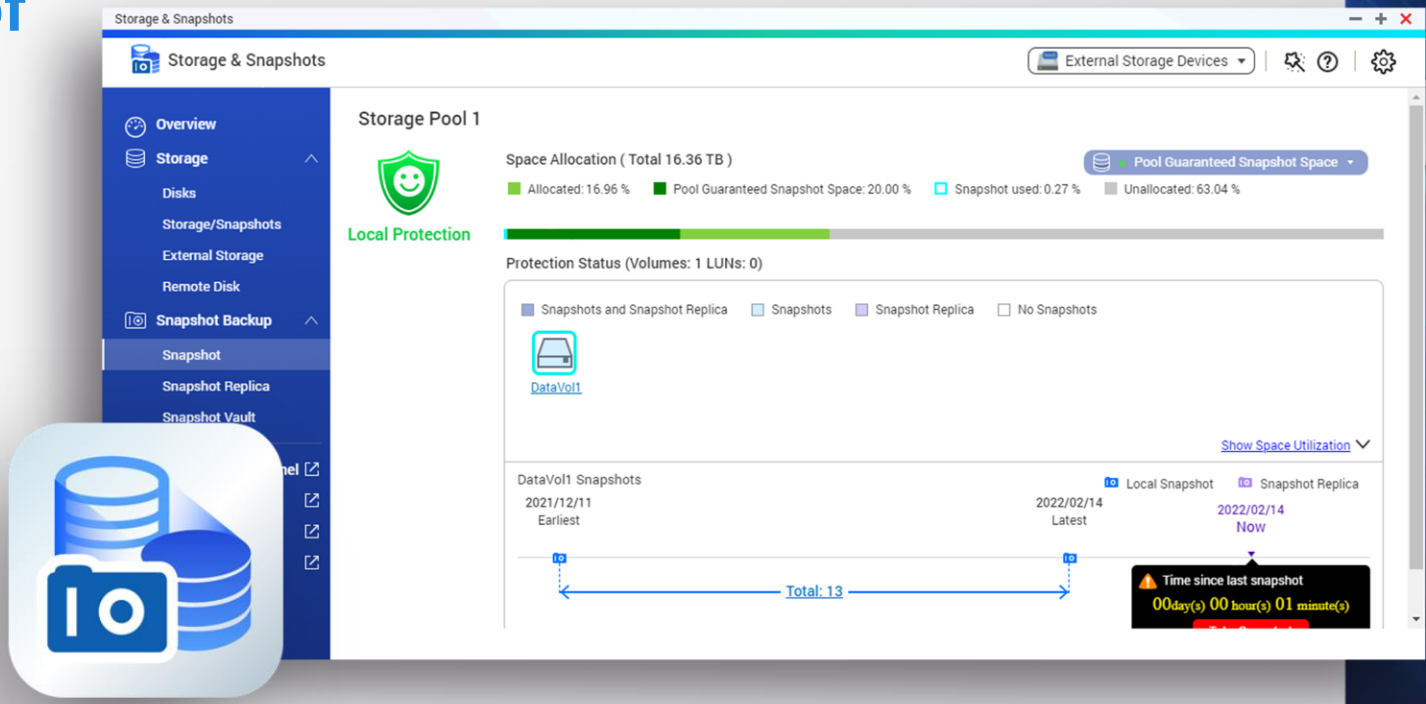
Regularly update, and use Malware Remover

Step 2

Routinely back up to your NAS, and create multi-version snapshots

Step 3

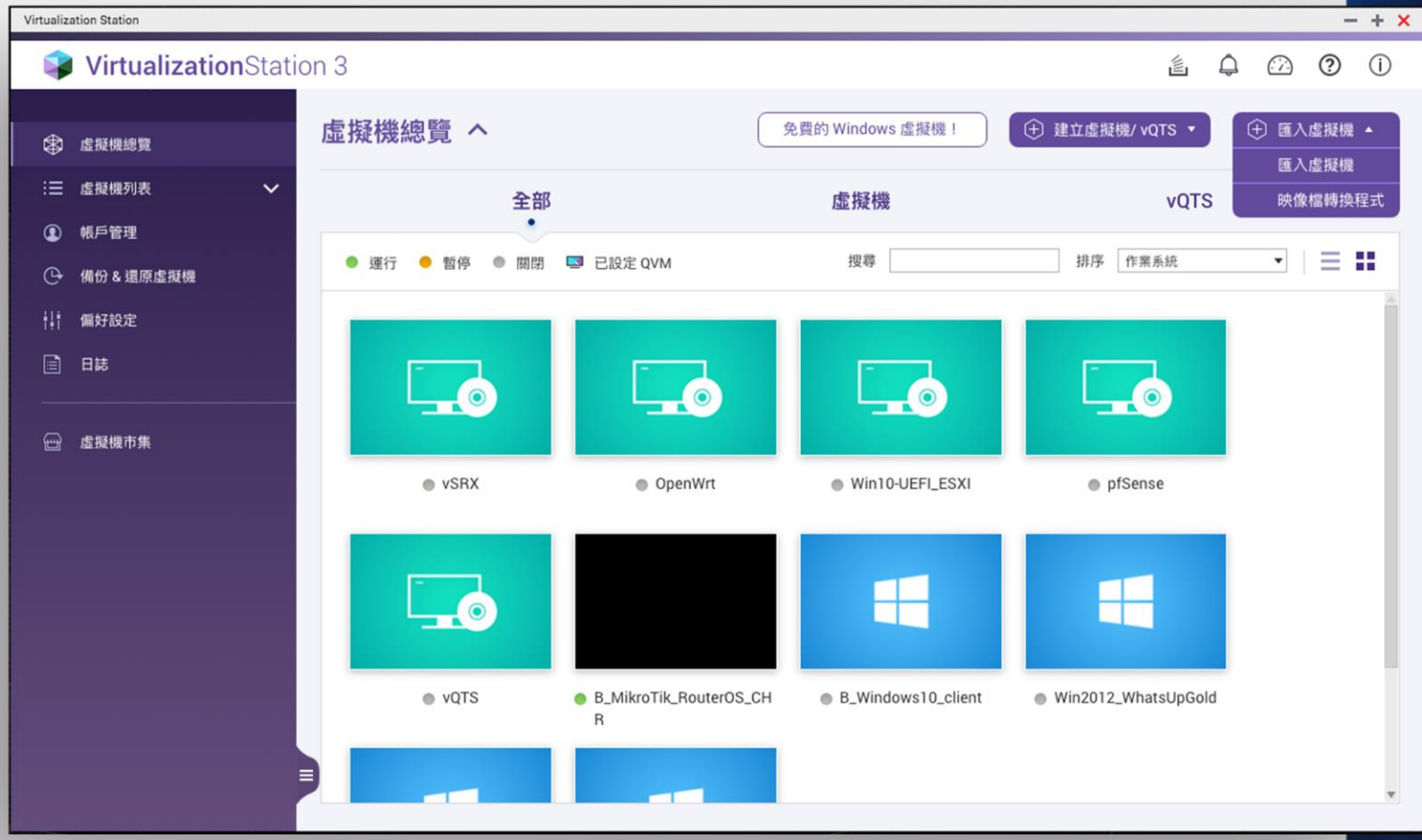
Back up snapshots to another QNAP NAS



Virtualization Station

Virtualization Station

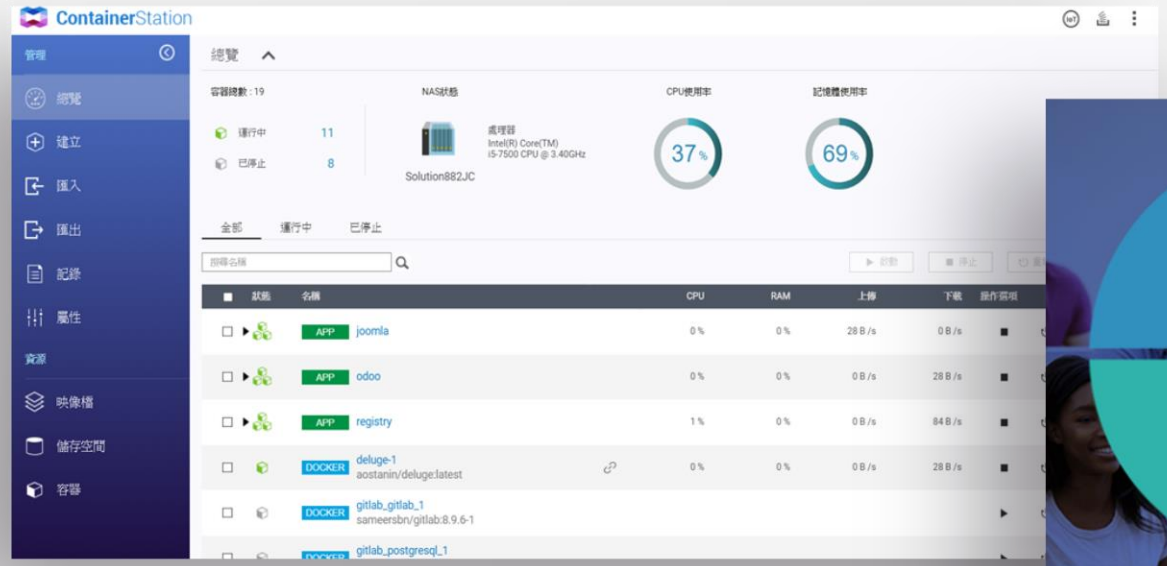
With Virtualization Station, you can create multiple virtual machines to run various operating systems such as Windows, Linux, UNIX and Android on TS-253E / TS-453E.



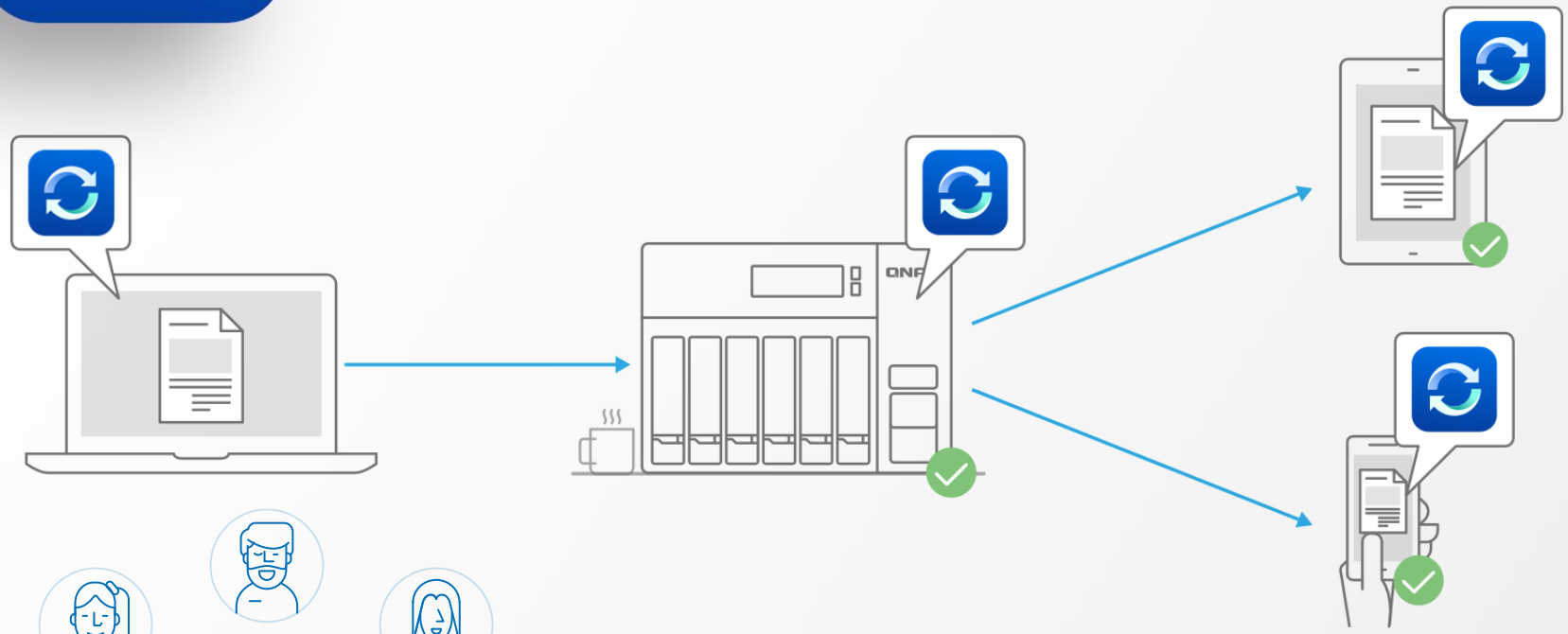
Container Station

Container Station

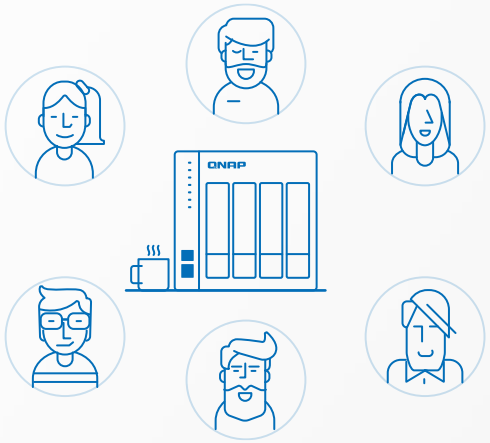
Exclusively integrates LXD and Docker®, Kata lightweight virtualization technologies, allowing you to operate multiple isolated Linux® systems on a QNAP NAS as well as download apps from the built-in Docker® Hub/LXD Image Server Registry.



Qsync , Cross-device file sync for individuals and teams



When there are different devices such as laptops and mobile phones, as long as the files are modified on a single device, the modified files will be automatically synchronized to other devices.

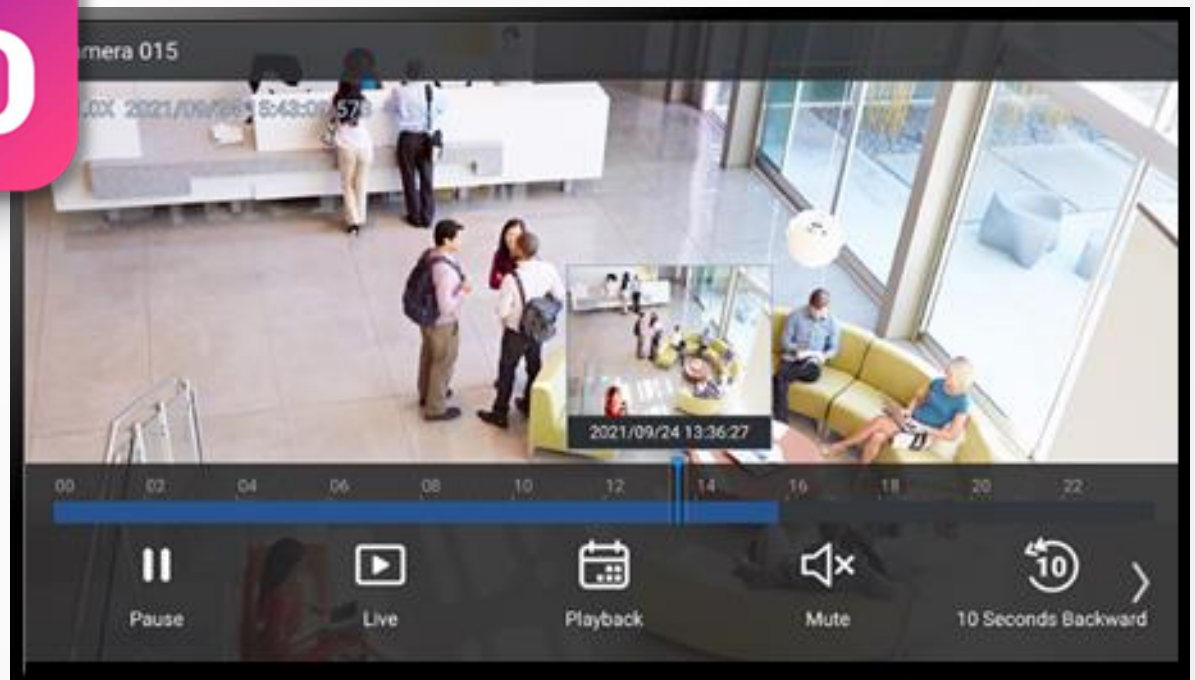


When team members collaborate and communicate, files can be automatically pushed to the binding devices of all members, making the workflow faster and collaboration smoother.

QNAP meets all needs for an office

TS-253E / TS-453E support Dual HDMI 4K output

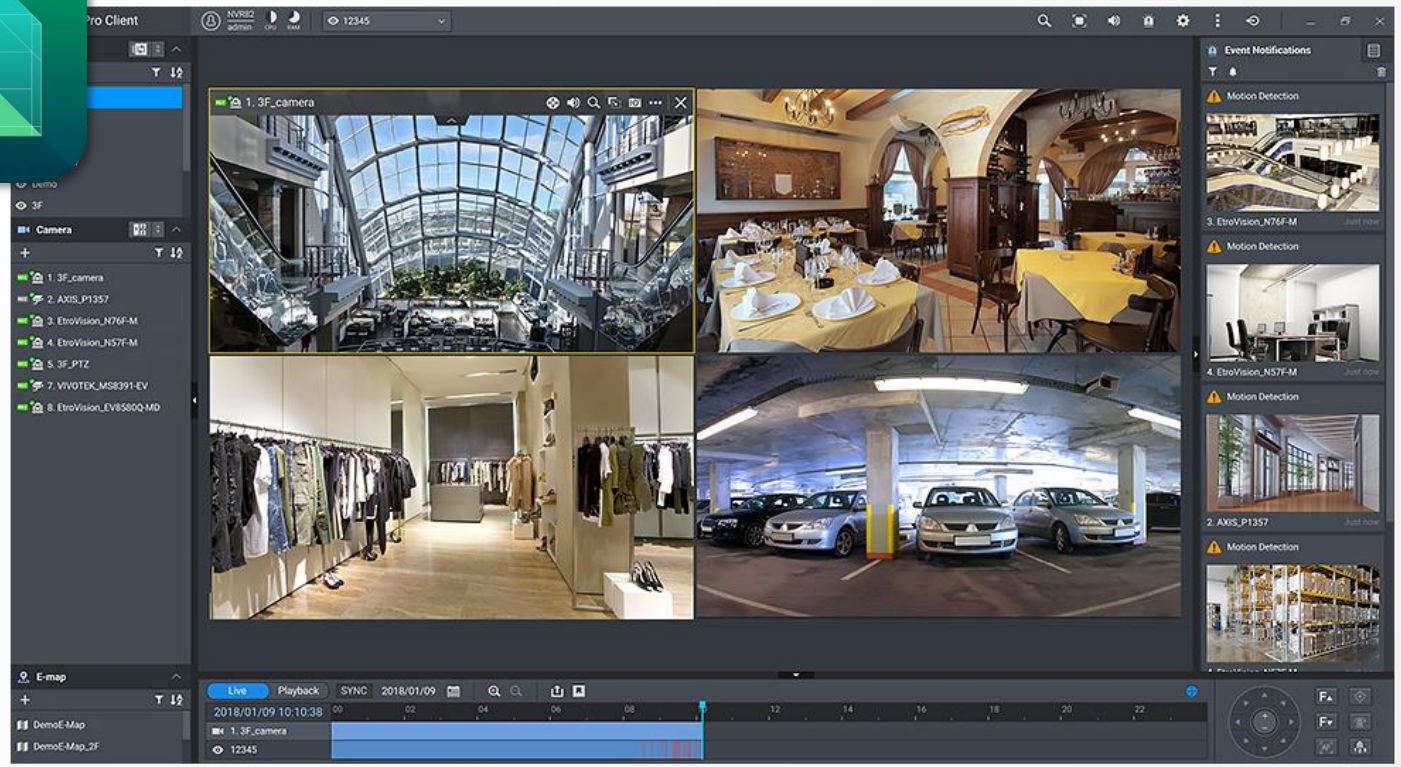
Dual HDMI 4K output

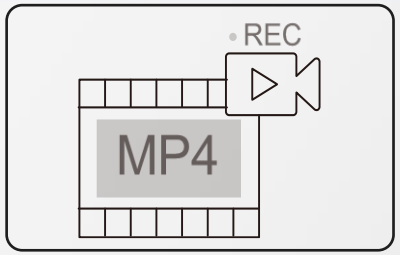


Directly connect the dual-screen output, you can extend and mirror the screen, use it as a large-screen monitor, or install the HybridDesk Station to turn it into a theater.

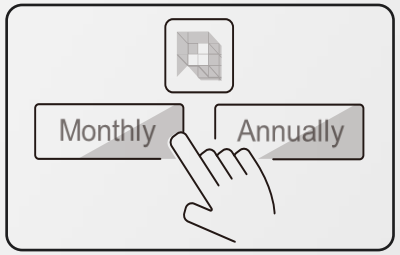
HybridDesk Station for various A/V needs

QVR Elite
Smart Surveillance System

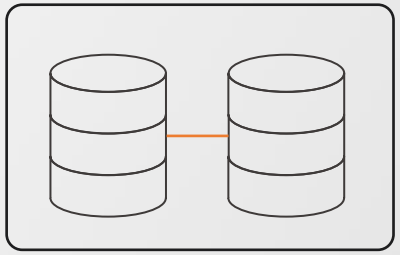




Record using the MP4 Format



Flexible Subscription



Expandable Capacity

2 channels are included for free

(expandable)

QVR Elite with powerful IP surveillance camera management and support

More than 180 brands

GeoVision
VIVOTEK BUILT WITH RELIABILITY
Panasonic
AXIS COMMUNICATIONS
MOBOTIX
Canon
HIKVISION
alhua TECHNOLOGY
Honeywell
Brickcom

More than 6700 models

ONVIF Profile support

ONVIF® | S

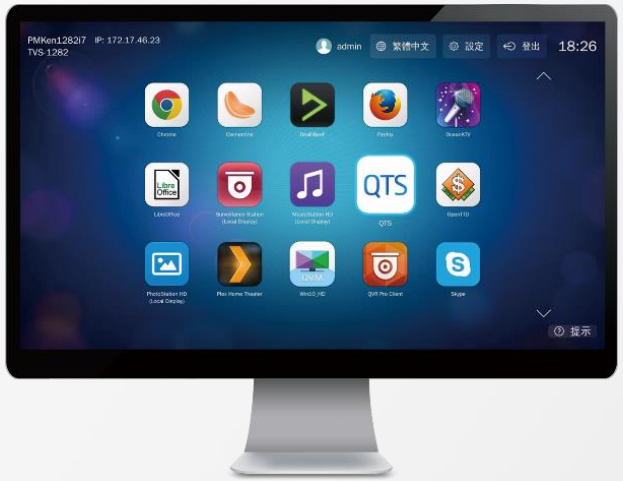
Record into QVR Elite by using the RTSP/RTMP link with no integration needed. Multiple video sources are supported - not just IP cameras.

https://www.qnap.com/en/compatibility-qvr-pro

The monitor screen can be upgraded to a video wall through dual HDMI screen output

Assign IP CAM in video wall mode in different screen

We can move the QVR monitoring output to another screen and operate other APPs on the original screen



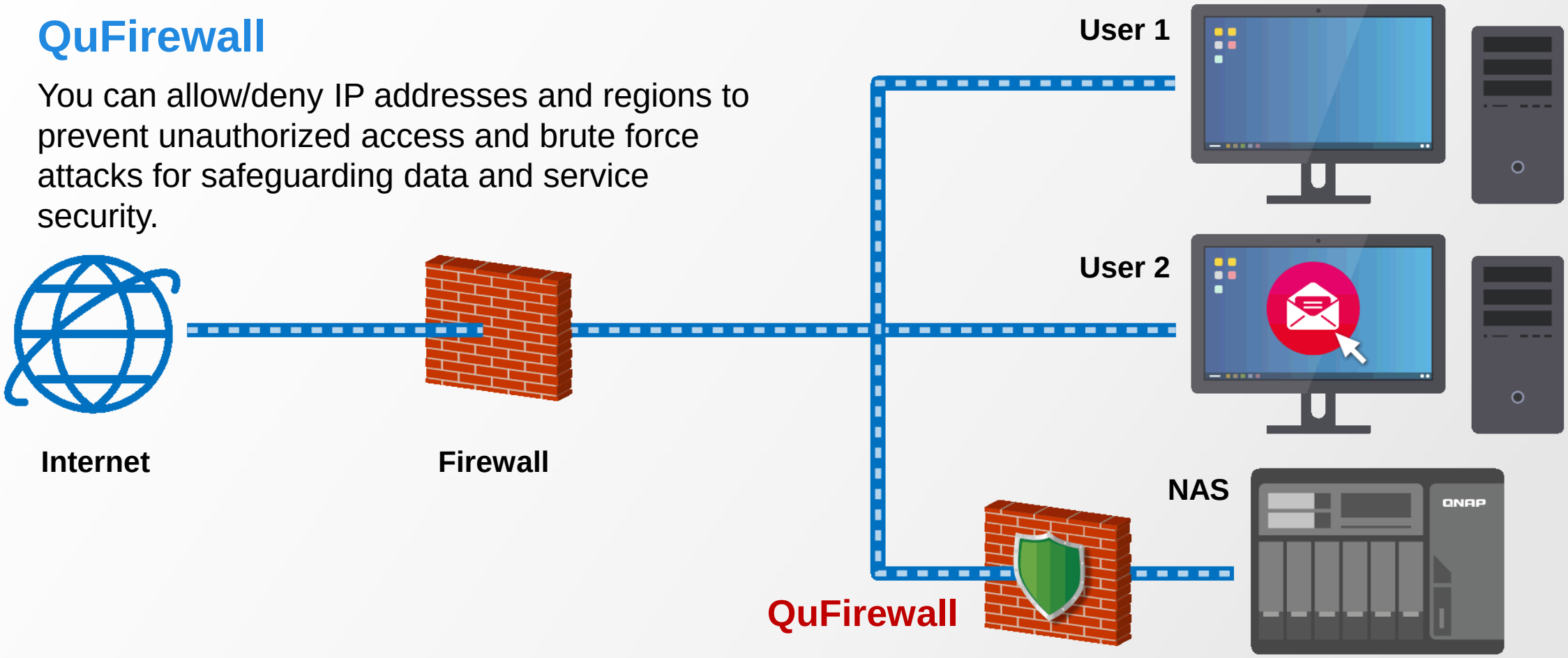
Through Mirror output, the same picture can also be output to different screens

With Mirror output, the same picture can be output to monitors in different places for monitoring

Built-in Firewall for QNAP Appliances

QuFirewall

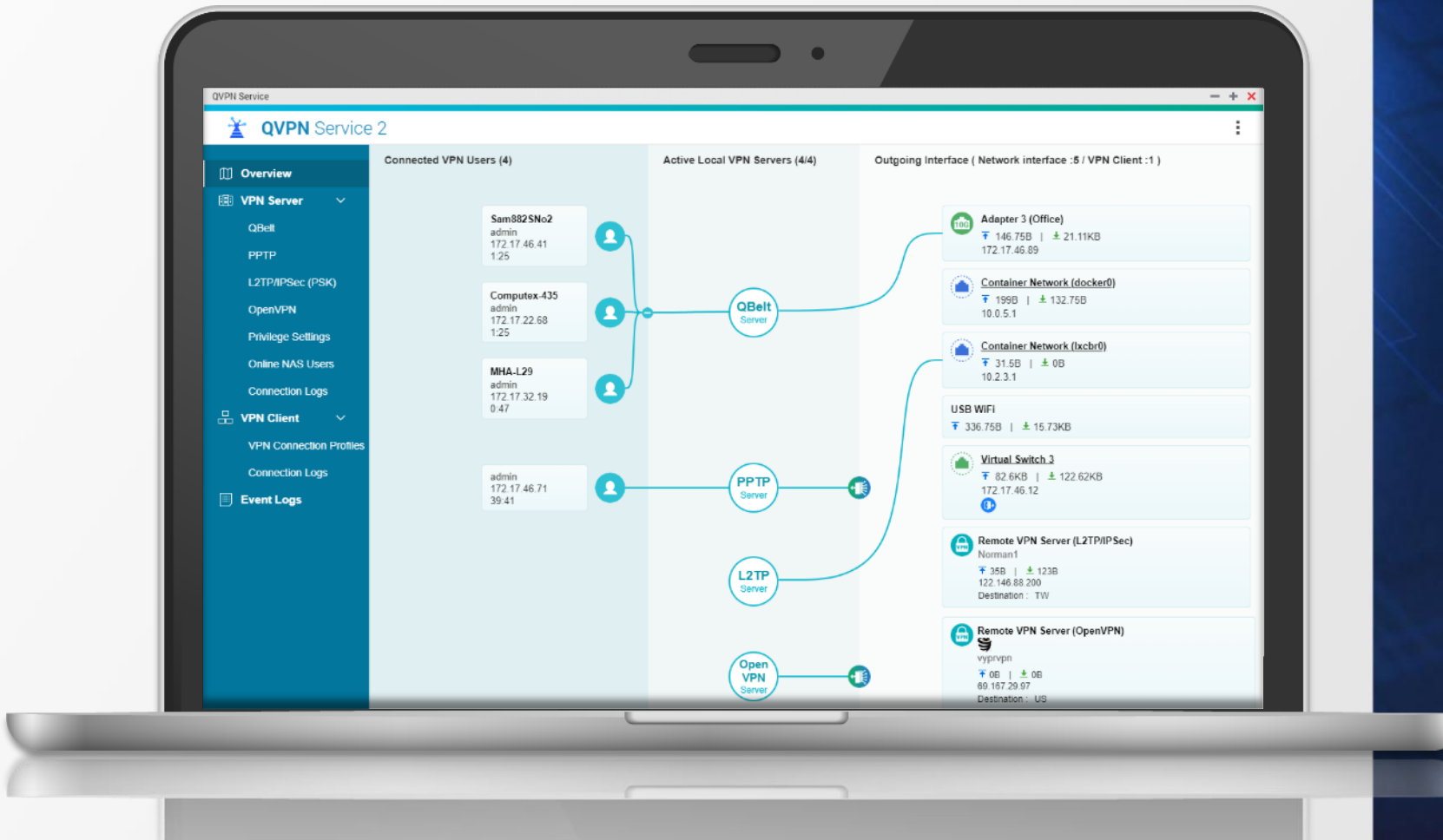
You can allow/deny IP addresses and regions to prevent unauthorized access and brute force attacks for safeguarding data and service security.



Secure communication for peace of mind

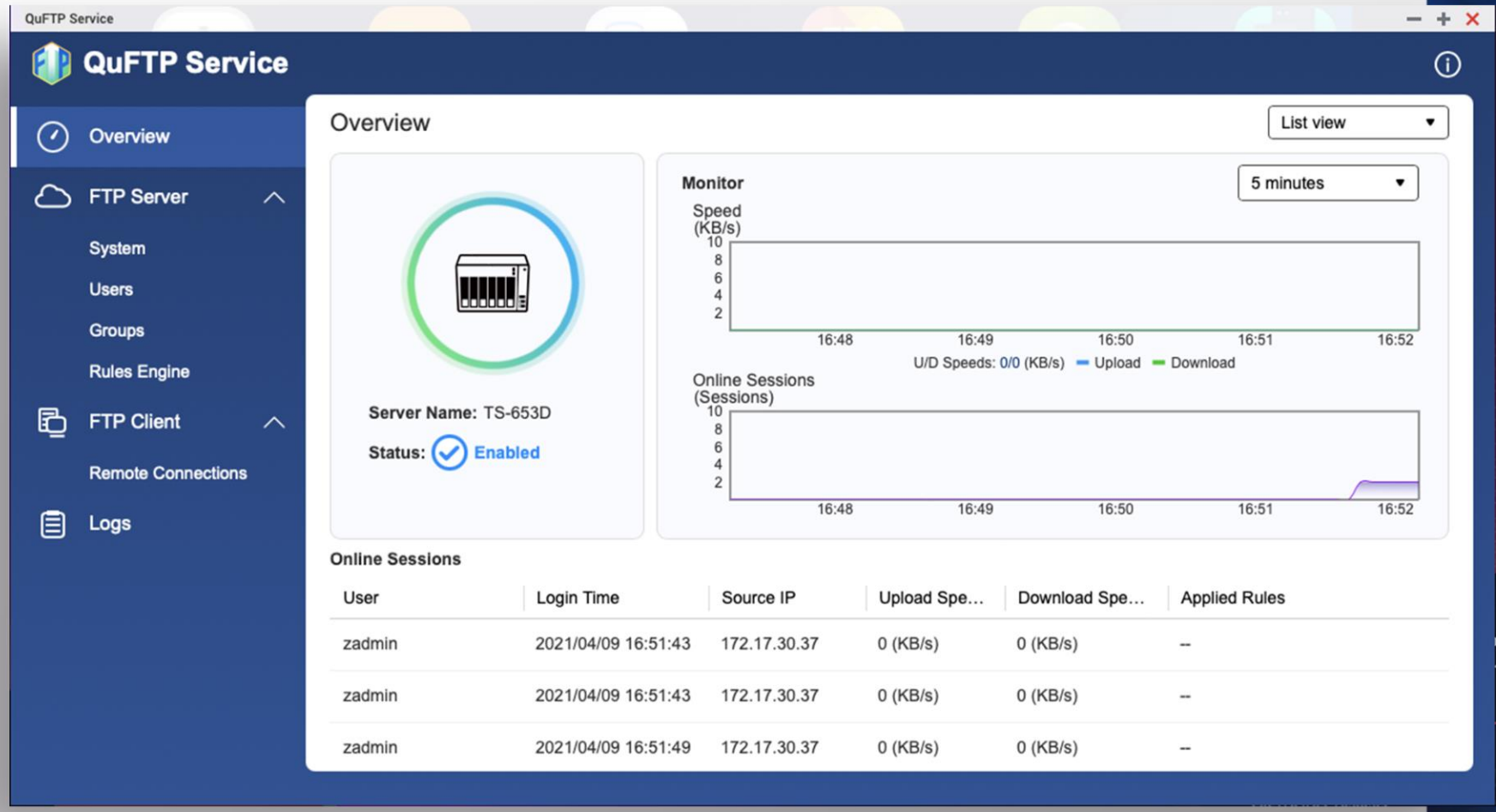
QVPN

- In addition to establishing a VPN client connection to a remote server, QVPN can also be used as a VPN server.
- Supports WireGuard® to provide faster and more stable VPN connections, and to easily set up VPN



QuFTP remote file FTP access service

- Updated independent
- Support FTP server
- Support FTP client
- Support TLS setting
- Support QoS setting



TS-253E / TS-453E with greatly improved performance

	TS-251+	TS-253E	TS-451+	TS-453E
SKU	TS-251+-2G TS-251+-8G	TS-253E-8G	TS-451+-2G TS-451+-8G	TS-453E-8G
CPU	Intel® Celeron® J1900 4-core/4-thread processor, burst up to 2.42 GHz	Intel® Celeron® J6412 4-core/4-thread processor, burst up to 2.6 GHz	Intel® Celeron® J1900 4-core/4-thread processor, burst up to 2.42 GHz	Intel® Celeron® J6412 4-core/4-thread processor, burst up to 2.6 GHz
O.S.	QTS	QTS	QTS	QTS
Memory	Max 8 GB DDR3L (2 x 4 GB)	8 GB DDR4 onboard not expandable	Max 8 GB DDR3L (2 x 4 GB)	8 GB DDR4 onboard not expandable
LAN	Gigabit Ethernet Port (RJ45) x 2	2 x 2.5 Gigabit Ethernet Port (2.5G/1G/100M)	Gigabit Ethernet Port (RJ45) x 2	2 x 2.5 Gigabit Ethernet Port (2.5G/1G/100M)
M.2	-	2 x M.2 2280 PCIe Gen 3 x2	-	2 x M.2 2280 PCIe Gen 3 x2
I/O	• USB 2.0 x 2 • 2 x USB 3.2 Gen 1 • HDMI x 1(Max 1080p)	• USB 2.0 x 2 • 2 x USB 3.2 Gen 2 • HDMI x 2 (up to 3840 x 2160 @ 30Hz)	• USB 2.0 x 2 • 2 x USB 3.2 Gen 1 • HDMI x 1 (Max 1080p)	• USB 2.0 x 2 • 2 x USB 3.2 Gen 2 • HDMI x 2 (up to 3840 x 2160 @ 30Hz)

Shipped with 3 - year standard warranty, optional up to 5 - year coverage

TS-253E / TS-453E

Backed by a 3-year warranty at no additional cost.

Extend hardware warranty up to 5 years

You can also purchase a warranty extension that extends your warranty coverage up to 5 years. (LW-NAS-PEACH-2Y)

Learn More: QNAP warranty services

TS-253E

TS-453E

TS-253E / TS-453E

Intel® J6412 Quad-Core Long-Term Availability NAS for Business and Professional Users

Provides dual-port 2.5 GbE, 4K HDMI dual-screen output, and dual M.2 PCIe SSD expansion slots

QNAP

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